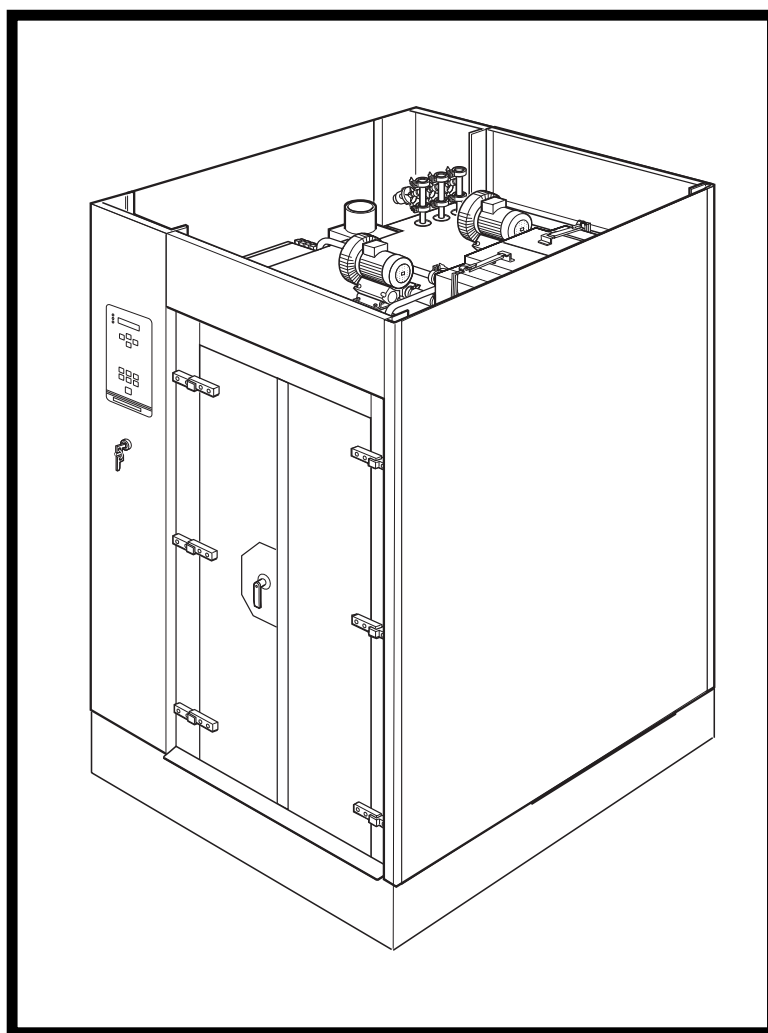


SERVICE INSTRUCTIONS



GETINGE

9900-serie Decomat

Serial no. 23818-
5005848-00

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Safety rules

This machine is designed with a number of integrated safety devices. To avoid personal injury it is essential that the safety devices are not bypassed or in any other way put out of action.

General safety rules

- The machine should be connected according to the instructions.
- The machine may not be used by juveniles.
- Installation work and servicing should be carried out by staff trained to use this machine.
- The door switch on the machine may not be bypassed under any circumstances.
- Leakage in the system, eg, due to worn lid gasket, must be repaired immediately.
- Personnel concerned must study valid handbooks and service manuals prior to any repairs or service work.
- All plug-in leads must be unplugged from all of the circuit boards of the control system before any welding on or close to the dishwasher is started.
- The machine may not be sprayed with water.
- Caution must be observed when using corrosive detergents.
- Safety precautions must be observed when using hot water or steam.
- Getinge 9900 may only be used for what it is designed and intended for, see operating instructions.
- The machine must not without permission from Getinge, be modified or rebuilt so that the function or effect changes.

Service in washing chamber

When serving the washing chamber, bring the key to the emergency shutdown.

Power cut-off device

The machine can be provided with a separate main switch in the power supply line, easily accessible on the wall.

Caution symbols

This manual contains certain warnings, instructions and advice of such importance that they are particularly emphasized. The configuration and use of the appertaining symbols are as follows:



This symbol indicates a warning in the text. It gives warning of dangers which could lead to minor or major injury to the person and even to a fatality.

It is also used in warnings to avoid damage to the machine.



This symbol indicates a warning (in the text) concerning the handling of ESD-sensitive components. Misuse may cause damage to the appliance or PCB.



This symbol indicates a warning in text included in the manual concerning hot surfaces on the machine. Such warnings refer to hazards that can result in more or less serious injury and in some cases fatal injury.

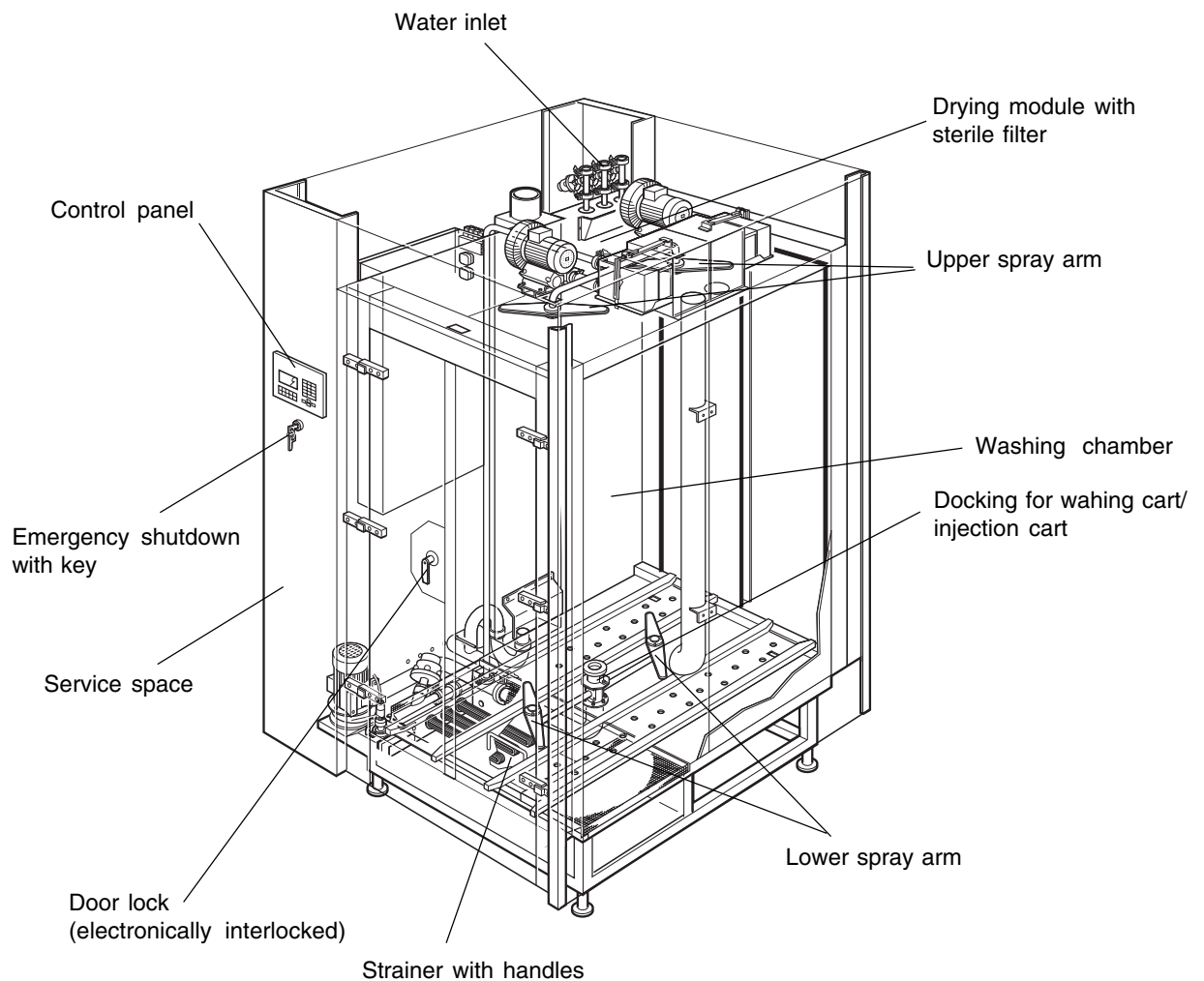
Description

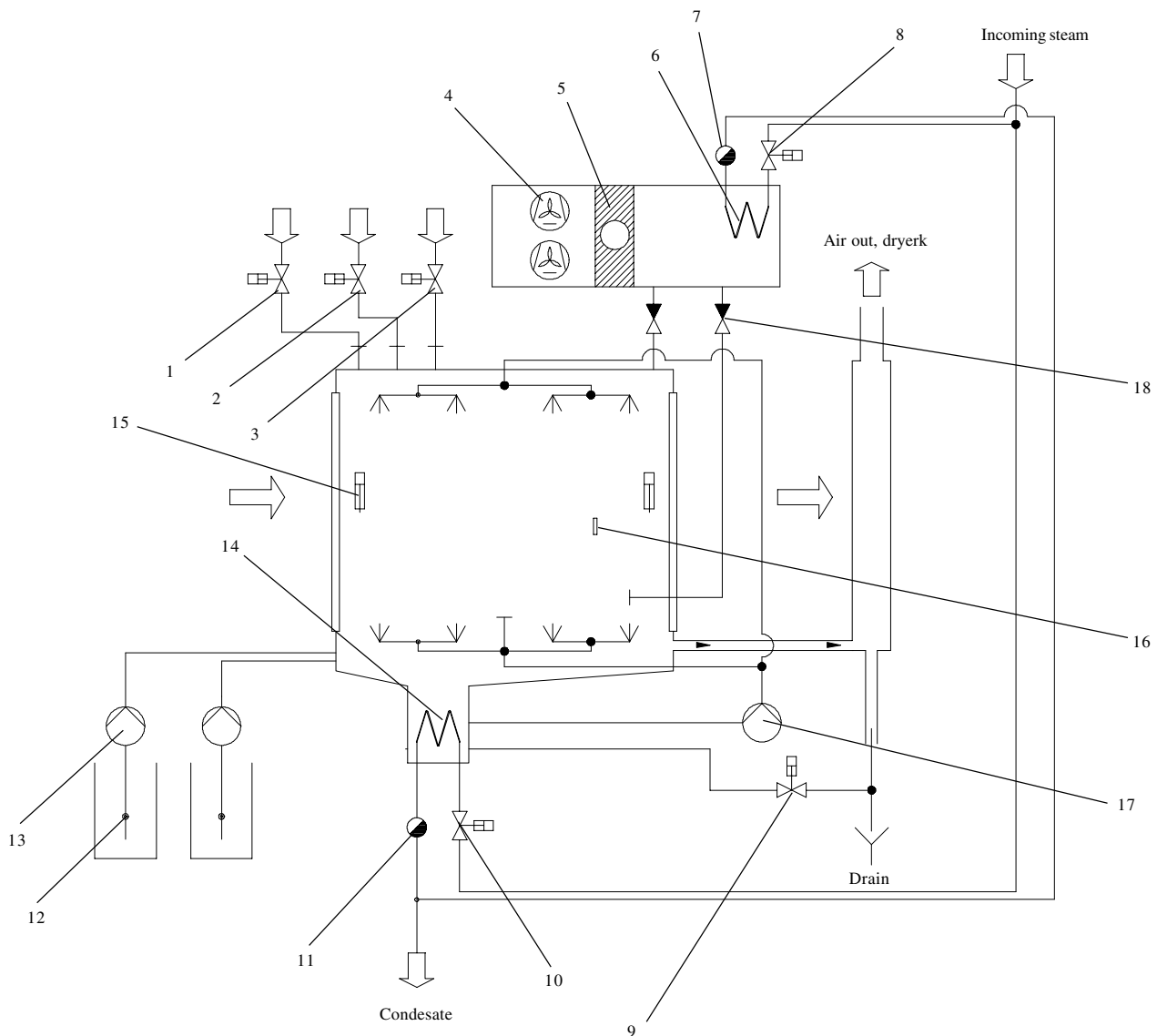
The Getinge 9900-series is a fully automatic washer disinfecter for the cleaning and disinfecting of contaminated dishware in hospitals, laboratories and the pharmaceutical industry.

The machine is provided with four spray arms and can be equipped with a variety of accessories for different cleaning requirements.

Several options are available with regard to installation to suit the range of use intended:

- Electric or steam heating.
- Connection of distilled or deionized water.
- With or without built-in drying system.
- Single or double doors for barrier mounting
- Freestanding or pit mounted
- Service space, right or left from door soiled side.



rcuit diagram (steam heating)

- | | |
|-------------------------------|----------------------------|
| 1. Cold water valve | 11. Condensate transmitter |
| 2. Warm water valve | 12. Level sensor |
| 3. Dest water valve | 13. Detergent pump |
| 4. Drying fan | 14. Element washing tank |
| 5. Sterile filter | 15. Cylinder, door locking |
| 6. Drying element | 16. PT-1000 sensor |
| 7. Condensate transmitter | 17. Circulation pump |
| 8. Steam valve, drying | 18. Non-return valve |
| 9. Drain valve | |
| 10. Steam valve, washing tank | |

Safe and simple

The disinfectant is controlled by a microprocessor, which implies several advantages:

- Safety and reliability is maintained at a high level by continual monitoring of the process.
- Dispensing of detergent, temperature, and disinfection timing can easily be set with great accuracy for a variety of conditions.

The programs can be exactly adapted to suit individual customer requirements. The user can make his/her own programs with the aid of the programming keys on the panel (see section "Programming").

The door and washing chamber are well-insulated, ie, ensuring quiet operation and low power consumption.

Operation is simple, with only a few and clearly identifiable control keys.



Programming may only be carried out by authorized personnel.

Simple service and installation

Valves and electric components are easily accessible from the front of the machine for inspection and service.

Door function

A 9900 is provided with either one or two doors. Doors are of the vertical sliding type.

The doors can be equipped with motors for automatic opening and closing. The doors have efficient anti-crushing protection.

Machines with double doors are fitted with an interlocking system that allows only one door to be open at a time. This means that the door on the clean side must be closed and latched by pressing the "DOOR" button before the door on the soiled side can be opened.

On pressing the START button, the door is locked and a yellow lamp flashes (process ON) for about 10 seconds. If the START button is pressed again during this "alert" period the door on the soiled side will be unlocked and it can then be opened by hand.

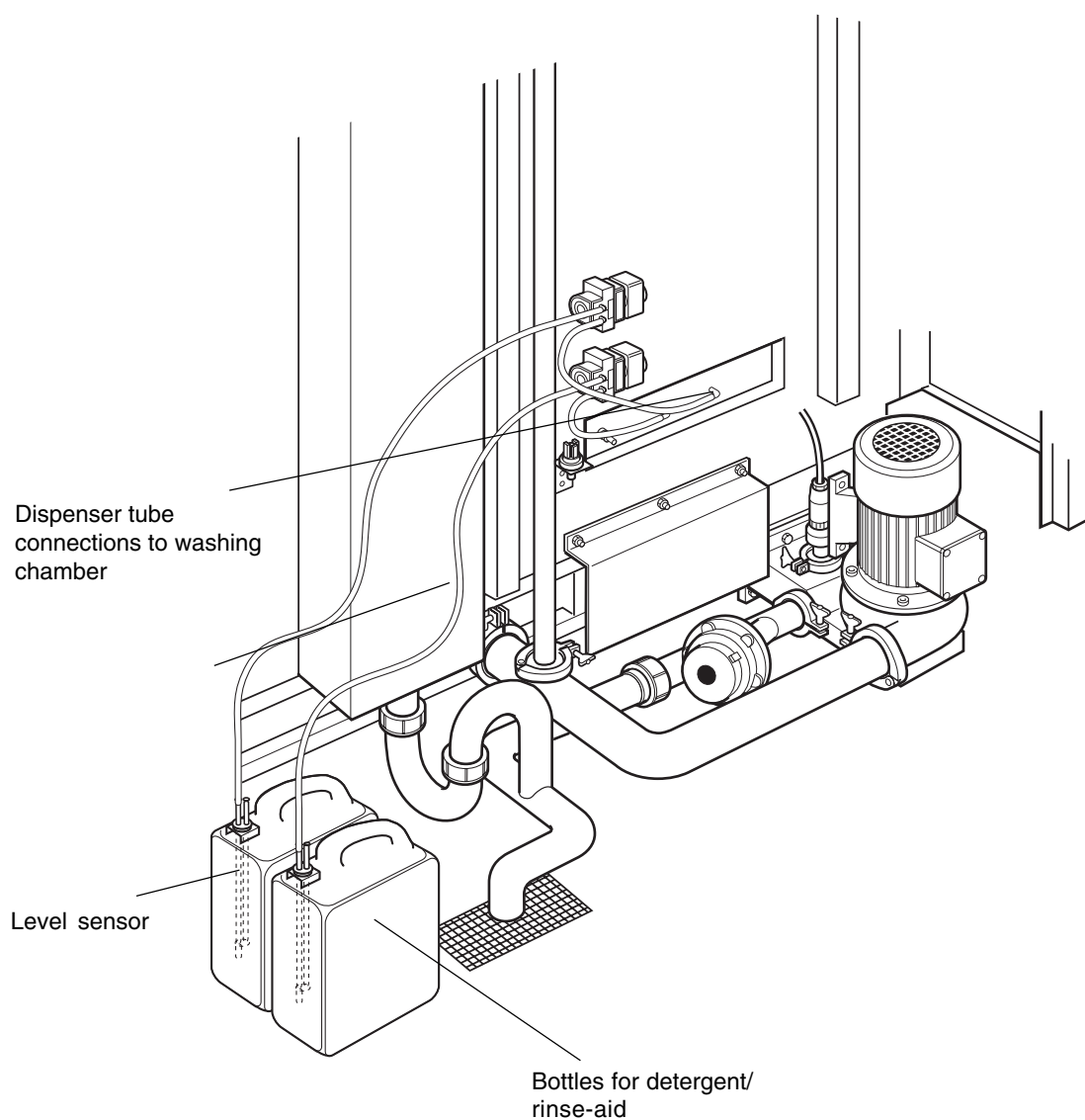
When the program is completed, a green lamp will light on both sides (if fitted with two doors) and the door on the clean side will unlock. The green lamp will go out when the door is opened by hand. If fitted with two doors, the door on the clean side must be closed, and locked with the DOOR button before the door on the soiled side can be opened.

Dispenser system

In its standard version the machine has two different dispenser systems. One system for alkaline detergent and one system for rinse-aid or acidic detergent. The size of the dispenser dose can be individually set for each program and each separate part of the program.

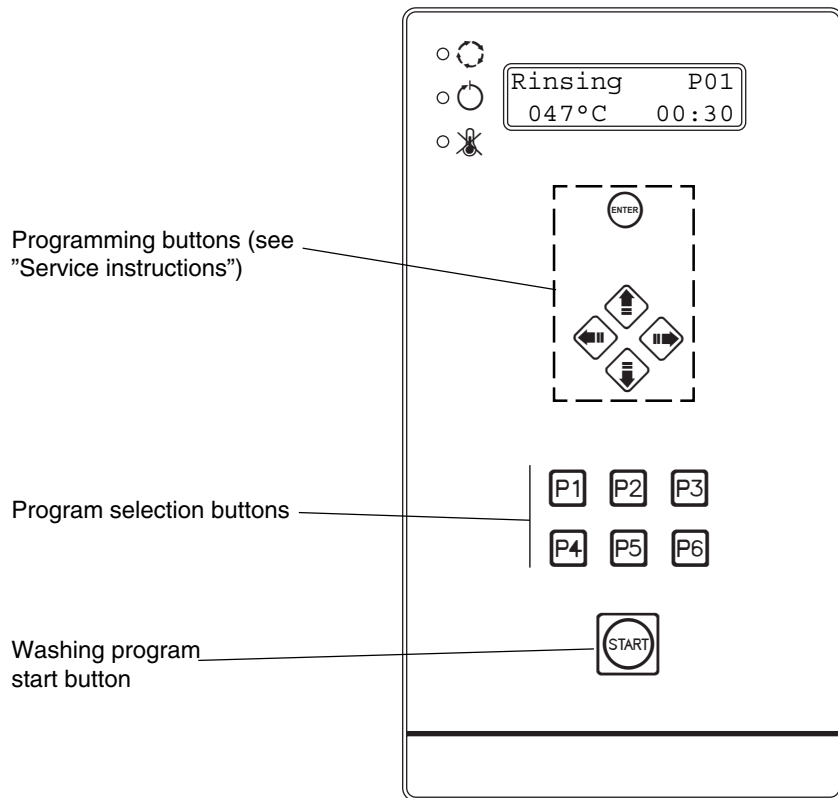
The message "FILL DETERGENT" will be displayed when the detergent bottle becomes empty and the machine cannot be started unless filled with detergent.

A third dispenser system can be installed if required



Programming device

The machine is fitted with an electronic programmable device which can contain a maximum of 60 different programs. Six of these programs can be started using the program selector keys.



A number of standard programs are included in the programming device on delivery (see Appendix, Standard programs). These programs can be modified to suit individual customer requirements. Furthermore, completely new individual programs can be programmed directly into the machine from the machine control panel. If desired, the whole or parts of a standard program can be used as the basis for programming. Programming may only be carried out by authorized personnel.

Choose a program using the program selector keys and press  to start the machine (the yellow lamp  will flash for 10 seconds and then change to a steady light).

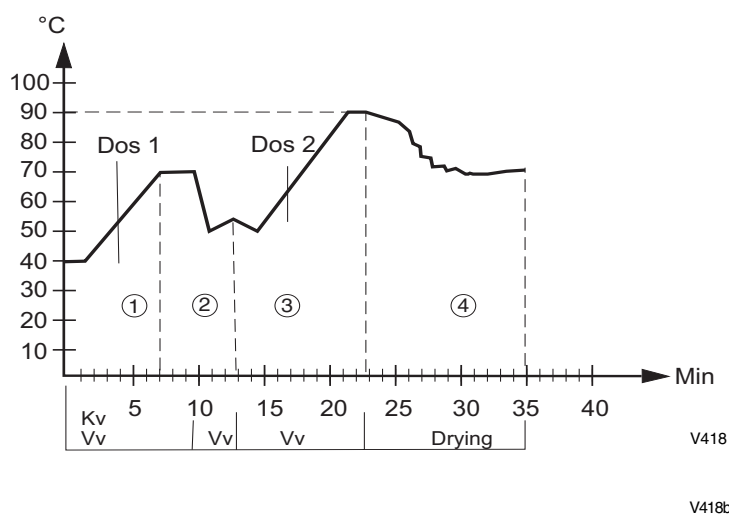
On completion of a process the green lamp at  will light and the door can then be opened.

Aborting a process start

A program that is started can be interrupted within 10 seconds after closing the door, ie, while  is still flashing. This is done by pressing  once. The door will unlock, and can be opened by hand.

Aborting a process that is running

The graph below shows the program sequence in the Wash-rinse-disinfection program.



Program phases

- ① Wash
- ② After rinse
- ③ Final rinse
- ④ Drying

The machine can also be stopped when a program is running by turning off the main switch. The program will continue if power is switched on again within 2 minutes. To zero set the program, press and hold and simultaneously and switch on the power. If there is a delay of more than 2 minutes before power is switched on, the program will be automatically set to zero and consequently the door cannot then be opened. To open the door in this case, the program must be restarted and then stopped by pressing within 10 seconds.

Stepping quickly in a program

A program that is in progress can be quickly stepped forward, ie, phase by phase, by pressing and holding the keys and pressed in and then press once for each phase of the program. The program can thus be stepped forward to the end or to any particular phase.



Never stop fast advance during a heating-up phase, as this can damage the machine.

Resetting the machine RAM (Read Only Memory)

The working memory of the machine (RAM) can be emptied of all information, eg, when changing the EPROM. Turn off the power supply at the main switch and press all the arrow keys when switching on again.

Calibrating the temperature while a process is running

The temperature of the machine can be calibrated while a process is in progress. To do this, hold  and  pressed in and press ENTER to gain access to Test temp where calibrating can be performed, see page 28. After calibrating, press ENTER.



Leave calibration mode and leave TEST immediately calibration has been carried out, otherwise the machine may suffer damage.

Technical data

Width	900 mm
Depth	1480 mm
Height	1270/1770 mm(9912/9918)
Environmental requirements:	
Humidity, maximum	80% at 31 °C
Room temperature	5 - 40 °C
Cold water	
Connections	20 (3/4") mm
Pressure	100-800 kPa
Rate of flow	50-150 l/min
Hot water	
Temperature	45-60 °C
Connections	20 (3/4") mm
Pressure	100-800 kPa
Rate of flow	50-150 l/min
Dest./deionized water	
Connections	20 (3/4") mm
Pressure	50-900 kPa (a separate supply pump must be fitted if pressure is less than 50 kPa)
Rate of flow	50-150 l/min
Condensate	15 (1/2") mm
Steam	
Connections	15 (1/2") mm
Pressure	300-500 kPa
Consumption	2 kg/min by 300 kPa
Drain	
Capacity	dia. 50 (2") mm 200 l/min
Exhaust air	
Flow rate	approx. 300 m ³ /h
Temperature	85 °C

Electrical connection

Variant G2	230	V, 3+E, 50 Hz
Fuse	3x100 A	
Effect	40	kW

Variant G2	208	V, 3+E, 60 Hz
Fuse	3x100 A	
Effect	40	kW

Variant G3	400	V, 3N+E, 50 Hz
Fuse	3x80 A	
Effect	40	kW

Variant G3	400	V, 3N+E, 60 Hz
Fuse	3x80 A	
Effect	40	kW

Variant V2	230	V, 3+E, 50 Hz
Fuse	3x25 A	
Effect	5	kW

Variant V2	208	V, 3+E, 60 Hz
Fuse	3x25 A	
Effect	5	kW

Variant V3	400	V, 3N+E, 50 Hz
Fuse	3x16 A	
Effect	5	kW

Variant V3	230	V, 3N+E, 60 Hz
Fuse	3x25 A	
Effect	5	kW

Compressed air	4-8 bar
Max. ambient temperature	50 °C
Noise level	60 dB (A)

Maintenance

How often maintenance will be required depends to a great extent on the quality of the water supply and how often the machine is used. The period between each maintenance should be determined in each particular case. We recommend, however, that the following maintenance measures should be performed once or twice every year.

With regard to repairs and adjustments, see under the heading Repairs and adjustments.

Periodic maintenance



May only be performed by authorized personnel.



This machine is connected to mains power supply and some components are live.

Component	Interval				
	Inspect every year	Replace as required	Replace every year	Replace every two years	
Door gasket	•	•			
Hoses between dosing pump and detergent bottle	•			•	
Hose between dosing pump and machine	•			•	
Hose in hose pump	•			•	
Filter in input media	•	•			
Overheating protection	•	•			
Spray arm bearings	•	•			
Sterile filter in dryer	•	•	•		
Thermostat in dryer	•	•			
Hoses to dryer	•	•			
Printer ribbon	•	•			<i>option</i>

Functional inspection



May only be performed by authorized personnel.



This machine is connected to mains power supply and some components are live.

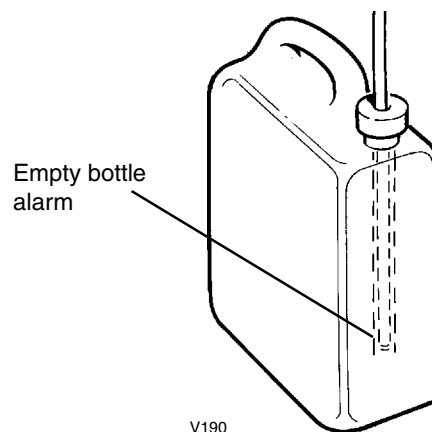
Operating instructions, cable, switches

- Check that the safety switch on the wall is working properly and that the connecting cable is undamaged and intact.

Filters and valves

- Check that level monitors and manual shut-off valves are working satisfactorily.
- Check the filters in the supply pipe (see section Cleaning the filters in the supply pipe). Clean as required.
- Check all pipe connections. Re-tighten and seal as required.

Controls



- The machine is operated using the keys on the control panel.
- Ensure that the operation keys are working. A beep shall be heard when a key that is working is pressed.
- While running a program: Check that the yellow lamp at L lights. The green lamp at M must light on completion of the program.

Inserts for goods

- Ensure that the inserts for the machine locate properly to the water connections.
- Ensure that the spray arms (if fitted) rotate freely and that they are not clogged.

Door

Check that the door gasket seals tightly and is undamaged and that no leakage occurs during a program cycle. Clean or replace the gasket as required.

Dosing the agents

Ensure that the suction tube and pump are fully primed with detergent or rinse-aid before running a program. When altering the pre-programmed amount of detergent, check the actual consumption with a measuring glass.

Flushing system



All inlet connections must be closed when working on the piping.

- Ensure that the spray arms can rotate freely.
- Ensure that the holes in the spray arms are not clogged. Clean as required.
- Ensure that the strainers in the bottom of the dishwasher chamber is fitted properly. Clean as required.
- Ensure that all couplings in the flushing system to the pump and chamber are tight. Re-tighten and seal as required.

Temperature check

- Test the temperature during a program run. Compare the time and temperature with the program sheet. The time and temperature in the disinfection phase is of particular importance.

The test equipment used must be able to continuously record the temperature and the time. Please observe that the relatively quick changes in temperature require the use of high grade equipment to achieve satisfactory results.

Only one test point, located centrally in the machine, is necessary for a functional check.

NOTE.

Disinfectors that do not conform to requirements concerning temperature, sequence, flushing system and personal safety must not be used until faults have been corrected.

Dryer unit

- Check gaskets and hoses once a year for leakage.
- Replace the sterile filter every 1000 hours of operation or once a year. Replace more often if air in the room is not clean.
- Check at least once a year that the thermostat setting is correct.

Printer

- Check the printer ribbon.
- Check the quality of printouts.

Programming

The machine memory (EPROM) can contain a maximum of 60 different washing programs (P01 - P60). A number of standard programs are included on delivery from the factory (see Appendix 1).

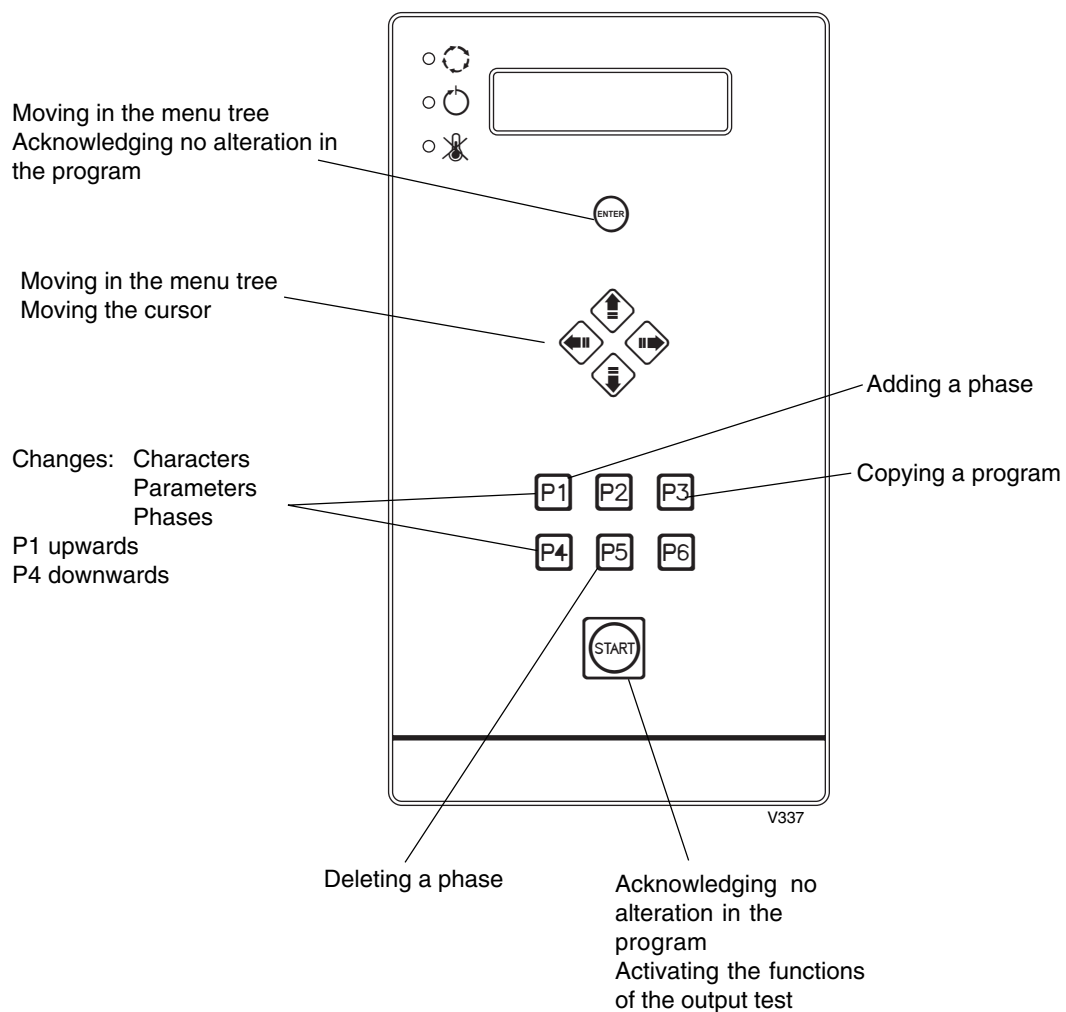
NOTE.

P01 - P60 are program numbers

P1 - P6 are program select keys

Push-button functions

The functions of each respective key are shown below:

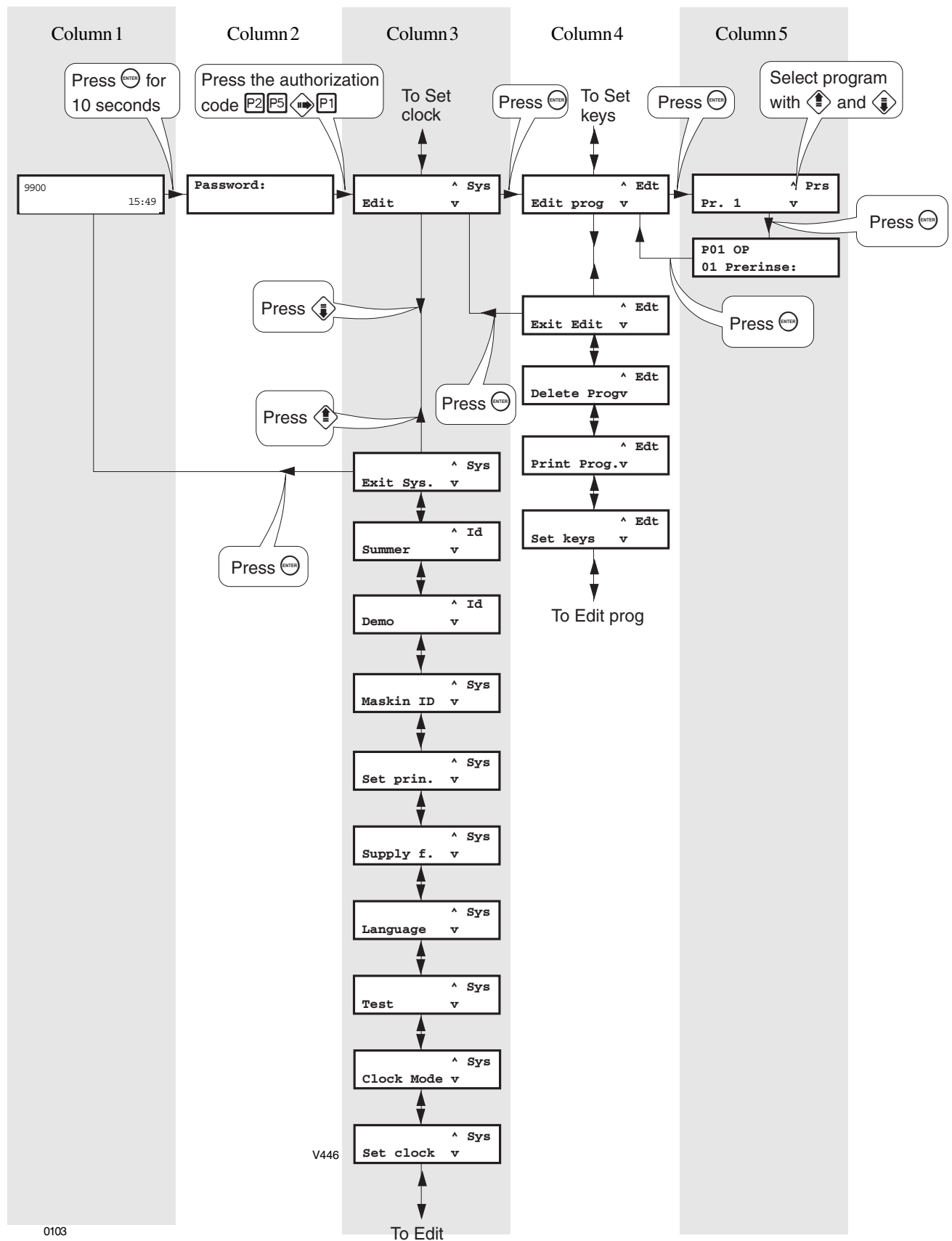


Key	Function	Reference
	Moving upwards in the menu tree	See, Moving in the menu tree
	Moving downwards in the menu tree	
	Moving the cursor to the left	
	Moving the cursor to the right	
	Moving in the menu tree Acknowledges alterations in the program	See, Moving in the menu tree
	Change upwards Characters, Parameters Phases	See altering parameters, characters See adding a phase
	Adding a phase	See, Adding a phase
	Copying a program	See, New program with existing program as basis (copying)
	Change downwards: Characters, parameters Faser	See altering parameters, characters See, Adding a phase
	Deleting a phase	See, Deleting a phase
	Acknowledge no alteration of program	

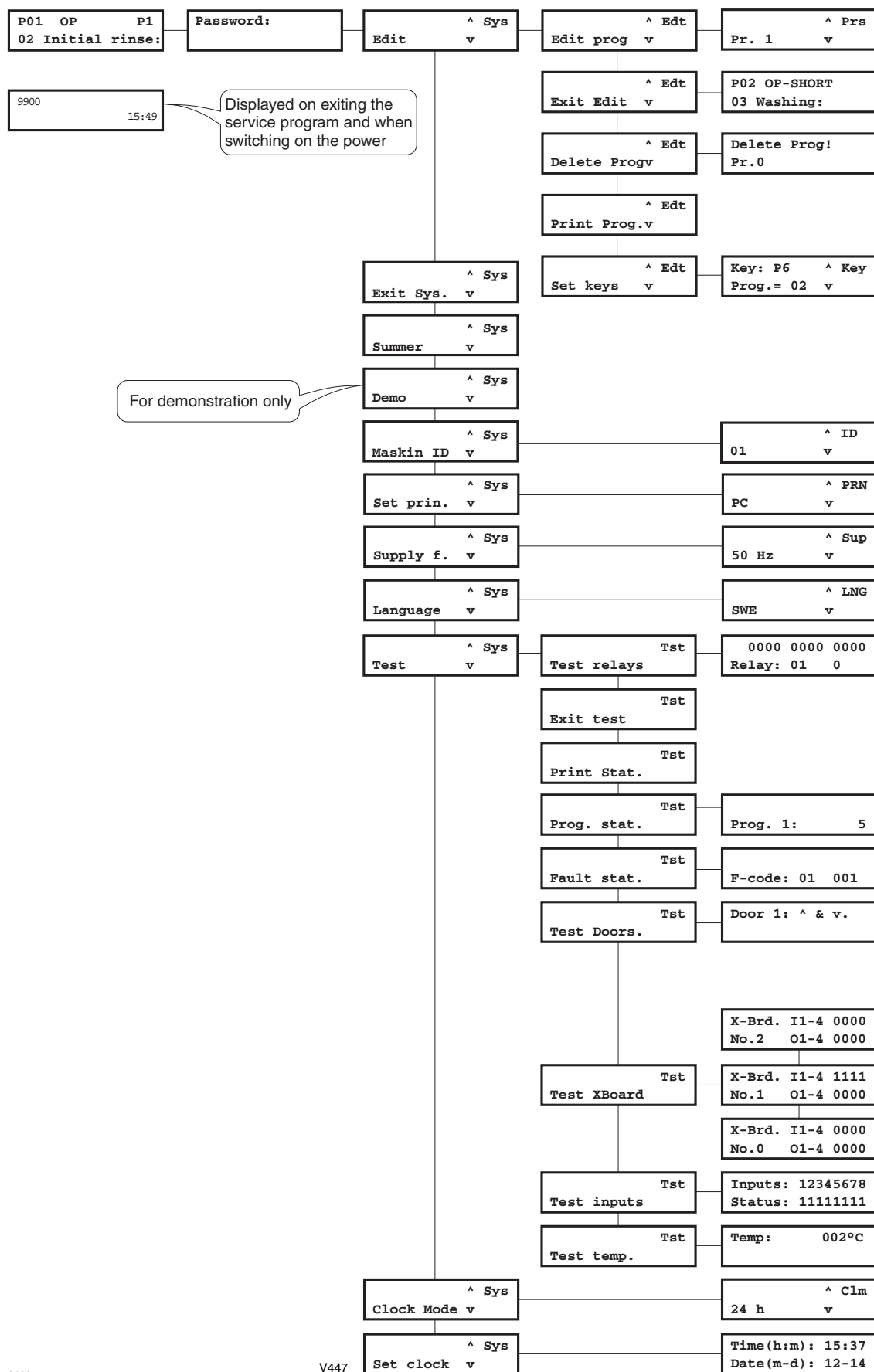
Moving in the menu tree

Move around in the menu by using the keys , and .

Alteration of parameters, characters, phases and testing is done in column 5.



Menu tree



0103

V447

Example and definition of program when programming

The following example is the standard program P01 OP.

P01 OP

02 Prerinse:
Time:00.01.00
WW=1
CW=1
DW=0
EW=0

01 Draining:
Time:00.00.40

03 Washing:
Time:00.01.00
WW=1
CW=1
DW=0
EW=0

Press  to move the cursor upwards

Dos (1) : 045ml
DosT=045°C
Temp=090°C

01 Draining:
Time:00.00.40

04 Rinse:
Time:00.01.00
WW=1
CW=0
DW=0
EW=0

Press  to move the cursor downwards

01 Draining:
Time:00.00.40

04 Rinse:
Time:00.01.00
WW=1
CW=0
DW=0
EW=0

01 Drainig:
Time:00.00.40

05 Final rinse:
Time:00.01.00
WW=1
CW=0
DW=0
EW=0
Dos (2) : 045ml
DosT=045°C
Temp=060°C

01 Drainig:
Time:00.00.40

End of Prog!

To change the program name:

- Press  and  to move the cursor to the desired position (the name may consist of not more than 12 characters).
- Press  and  to alter characters.

Only two lines of the whole program are visible in the display

DV=0

Press  or  to move the cursor to the left or right respectively

To change parameters:

- Press  and  to position the cursor onto the figure
- Press  and  to alter the figure value

Creating a new program

There are two ways to create a new program:

- By copying an existing program and altering the phases and parameters.
- By programming from the beginning, ie, all phases that are to be included must be inserted.

NOTE.

When making your own program, an emptying function must be included between each washing phase. The time allotted for emptying must be at least 40 seconds.

Phases and parameters

There is a number of phases that can be added, and under each phase there is a number of parameters which must be set to the desired value.

The different parameters and their phases:

Fas	Designation	Parameters	Comments
01	Draining:	Time:00.00.00	Setting the time h, min, sec
02	Prerinse:	Time:00.00.00 WW=0 CW=0 DV=0 EW=0	Setting the time h, min, sec WW=Hot water CW=Cold water DV=Distilled water EW=Extra function*
03	Washing:	Time:00.00.00 WW=0 CW=0 DV=0 EW=0 Dos(0):000ml DosT=000°C Temp=000°C	Setting the time h, min, sec WW=Hot water CW=Cold water DV=Distilled water EW=Extra function* Amount and type of detergent Temp. when detergent is added Temperature of water
04	Rinse:	Time:00.00.00 WW=0 CW=0 DV=0 EW=0	Setting the time h, min, sec WW=Hot water CW=Cold water DV=Distilled water EW=Extra function*
05	Finalrinse:	Time:00.00.00 WW=0 CW=0 DV=0 EW=0 Dos(0):000ml DosT=000°C Temp=000°C	Setting the time h, min, sec WW=Hot water CW=Cold water DV=Distilled water EW=Extra function* Amount and type of detergent Temp. when detergent is added Temperature of water
06	Drying:	Time:00.00.00 Temp=000°C	Setting the time h, min, sec Drying temperature
07	Neutralize:	Time:00.00.00 WW=0 CW=0 DV=0 EW=0 Dos(2):000ml DosT=000°C Temp=000°C	Setting the time h, min, sec WW=Hot water CW=Cold water DV=Distilled water EW=Extra function* Amount and type of detergent Temp. when detergent is added Temperature of water

10	Add. rinse:	Time:00.00.00 WW=0 CW=0 DV=0 EW=0	Setting the time h, min, sec WW=Hot water CW=Cold water DV=Distilled water EW=Extra function*, dosage pump 4
11	Dry-Empty:	Time:00.00.00 Temp=000°C	Setting the time Drying temperature

Designation	Action
WW	Select 1 to add hot water
CW	Select 1 to add cold water
DV	Select 1 to add distilled water
EW	Select 1 for extra function
Dos(1):	Select 1 to add alkaline detergent
Dos(2)	Select 2 to add rinse-aid or acidic detergent
Dos(3)	Select 3 to add chemical agent
DosT	Select temp. when detergent is added

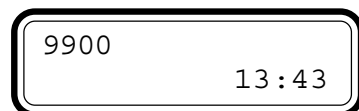
* When an extra valve is fitted (option)

New program with existing program as basis (copying)

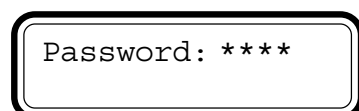
If a new program is to be created, ie, with an existing program as its basis, then the existing program must first be copied, the copy modified as required, and then saved to a vacant program number.

NOTE.

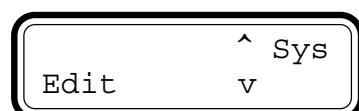
To make variants by modifying an existing program, a copy of the program must be made first.



Press until Password is displayed (10 seconds).



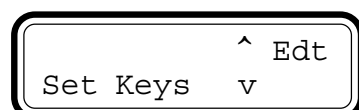
Type the authority code .



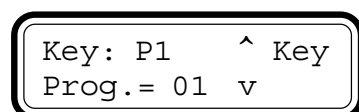
Press .



Press or to find Set Keys.



Press .



If, for example, is to be copied to .

- Press .
- Press or to find a vacant program number (a number that has no pre-programmed program). Program number P12 is chosen in the example, see Appendix 1 for choosing a program number. Press .



Press .

```

      ^ Prs
Pr. 1  v

```

Press  or  to find Pr. 6 and press .

```

      ^ Edt
P12
* End of Prog!

```

- Position the cursor on * to the left of the last line.
- Press .

```

      ^Copy
Pr. 1  v

```

- Press  or  to find Pr. 1 and press .

```

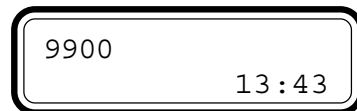
      ^Copy
P12 OP
02 Prerinse:

```

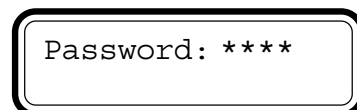
- Alter the phases and parameters of the program in accordance with "Altering an existing program".

Altering an existing program

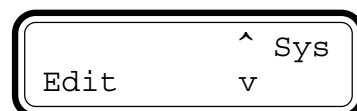
The actual program number (0-60) must be on one of the program select keys (P1-P6) when adding or deleting a phase/phases or when altering parameters. See, "Selecting a program with the program select keys".



Press until Password is displayed (10 seconds).



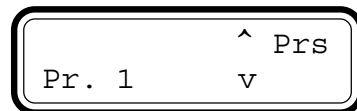
Type the authority code .



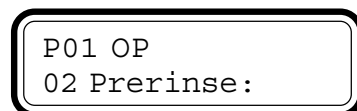
Press .



Press .



Press and to find the actual program select key (P1-P6) and press .

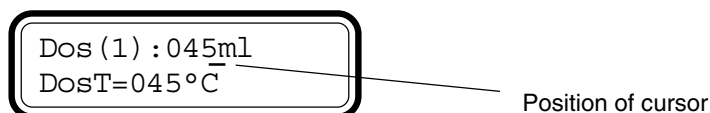


The following is possible in this mode:

- Parameters can be altered, see Altering parameters and characters.
- Phases can be added, see, Adding a phase.
- Phases can be deleted, see, Deleting a phase.

Altering parameters and characters

- To gain access to this mode see, Altering an existing program.
- Move the cursor to the desired parameter (see, Phases and parameters) or character (see, Appendix 2) using  and . Position the cursor, using  and , on the parameter or the character that is to be altered.



- Alter the parameter value with  and .

Adding a phase

- To gain access to this mode see, Altering an existing program.
- Move the cursor to the far left of the phase that is to follow the added phase.
- Press  (the cursor flashes) and choose the phase using  and . Press

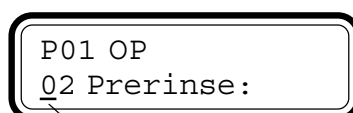


Position of cursor

. The new phase is thus entered and its parameters can be adjusted, see, Altering parameters and characters.

Deleting a phase

- To gain access to this mode see, Altering an existing program.
- Move the cursor to the far left of the phase that is to be deleted.
- Press  (the cursor flashes) and press .



Position of cursor

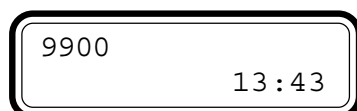
Deleting a program

NOTE.

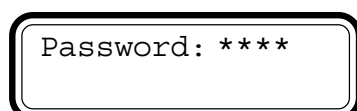
"Delete program" should only be used when all of the program numbers are occupied.

When choosing a program with the program select keys it is not necessary to delete the old program because it will be replaced by the new one.

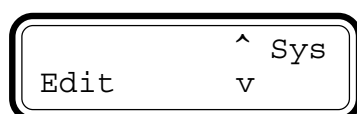
"Delete program" cancels the phases and parameters of the program selected with the program select keys **P1**-**P6**.



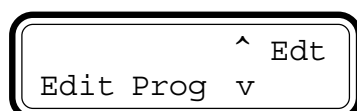
Press  until Password is displayed (10 seconds).



Type the authority code **P2****P5**  **P1**.



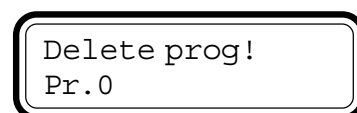
Press .



Press  and  to find Delete Prog.



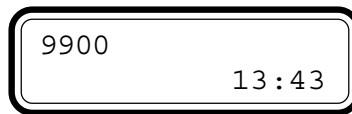
Press .



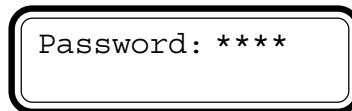
Choose the program select key with  and  and press . No program select key will be emptied if Pr. 0 is chosen and  is pressed.

Selecting a program with the program select keys

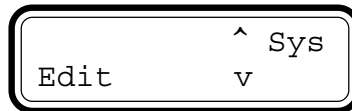
Procedure for determining which program (0-60) in the database is to be retrieved by the program select keys **P1**-**P6**.



Press **ENTER** until Password is displayed (10 seconds).



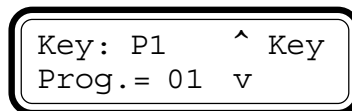
Type the authority code **P2****P5** **↔** **P1**.



Press **ENTER** and press **↑** or **↓** to find Set Keys.



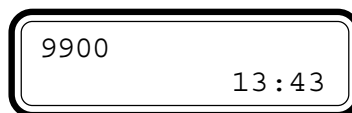
Press **ENTER**.



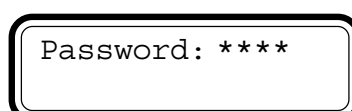
- Press the desired program select key **P1**-**P6**.
- Choose the desired program 01 - 60 with **↑** and **↓** and press **ENTER**.

Program printout

Prints out the programs that are saved under the program select keys. Example of printout see, Appendix 3.



Press **ENTER** until Password is displayed (10 seconds).



Type the authority code **P2****P5** **↔** **P1**.

	^ Sys
Edit	v

Press  and press  or  to find Print prog.

	^ Edt
Print prog.v	

Press .

Choice of printer

9900	
	13:43

Press  until Password is displayed (10 seconds).

Password: ****

Type the authority code .

	^ Sys
Edit	v

Press  or  to find Set prin.

	^ Sys
Set prin. v	

Press .

	^ PRN
PC	v

Choose the type of printer with  and  (PC, Alfa or Sabre) and press .

Choice of supply frequency

9900	
	13:43

Press  until Password is displayed (10 seconds).

Password: ****

Type the authority code **P2** **P5**  **P1**.

Edit	^ Sys v
------	------------

Press  or  to find Supply f.

Supply f.	^ Sys v
-----------	------------

Press .

50 Hz	^ Sup v
-------	------------

Choose the frequency with  and  (50 or 60 Hz) and press .

Choice of language

9900	13:43
------	-------

Press  until Password is displayed (10 seconds).

Password: ****

Type the authority code **P2** **P5**  **P1**.

Edit	^ Sys v
------	------------

Press  or  to find Set prin and press .

SWE	^ LNG v
-----	------------

Choose the language with  and  (SW, FRS, GER, ENG or JAP) and press .

Test

9900	13:43
------	-------

Press  until Password is displayed (10 seconds).

Password: ****

Type the authority code .

Edit	^ Sys
	v

Press  and  to find Test and press .

Test	^ Edt
	v

Press . Press  or  repeatedly to find the right test section.

Testing the outputs

See section Test to get to this position.

Test relays
Tst

Press 

0000 0000 0000
Test relays

Press  or  to choose the desired relay number 1 - 12. Switch ON or OFF with  (automatic switch OFF occurs after 60 seconds if manual switch OFF is not made), see list of relays below.

0 OFF

1 ON

List of relays

Outputs	Function	Relay card A
1.	ValveDV	
2.	Valve WW	
3.	ValveCW	
4.	Heat machine tank	
5.	Circulation pump	
6.	Vacant	
7.	Vacant	
8.	Dispenser pump 1	
9.	Dispenser pump 2	
10.	Door closing SS	
11.	Vacant	
12.	Drain pump	

Testing the temperature value

See section Test to get to this position.

Test temp.
Tst

Press 

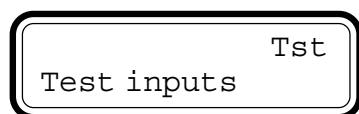
Temp :
055°C

Temperature calibration is performed using a certified instrument. The temperature sensor of the certified instrument is attached with a cable tie to the temperature sensor of the . (See Item 6 on page 6 of the Spare Parts List).

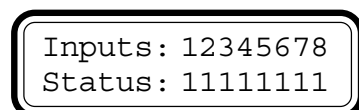
Adjust the temperature value of the until it agrees with the reading on the certified instrument by positioning the cursor beneath the value and pressing  or  to increase or reduce the value. The reading can be changed from °C to °F by positioning the cursor at the extreme right and pressing  or .

Testing the inputs

See section Test to get to this position.



Press 



The status of each input is shown in the display (0 = inactivated, 1 = activated). Testing is made by manual actuation of the respective input.

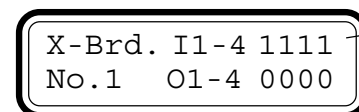
Input	Function	Relay card A
1.	Water level	
2.	Motor circuit breaker	
3.	Door unlocked SS	
4.	Door locked SS	
5.	Door closed SS	
6.	Empty container alarm 1	
7.	Empty container alarm 2	
8.	Conductivity (option)	

Testing inputs on the expansion board

See section Test to get to this position.



Press 



Inputs

Inputs Press  or  to choose expansion board 0 - 3. Status of the inputs and outputs is displayed at the same time.

Inputs for panel board 0 (X-Brd 0)

Input	Function
1.	Vacant
2.	Vacant
3.	Coding panel card CS
4.	Coding panel card CS

Inputs for expansion board 1 (X-Brd 1)(B)

Input	Function
1.	Vacant
2.	Door closed CS
3.	Door locked CS
4.	Door unlocked CS

Inputs for expansion board 2 (X-Brd 2)(C)

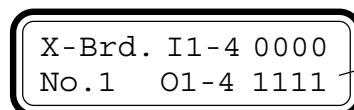
Input	Function
1.	Vacant
2.	Empty container alarm 3
3.	Vacant
4.	Vacant

Testing outputs on the expansion board

See section Test to get to this position.



Press 



Outputs

Press  or  to choose expansion board 0 - 3. Status of the inputs and outputs is displayed at the same time. Choose the output with  and  and activate the relay with .

Outputs for panel board RS (X-Brd 0)

Output	Function
1.	Red lamp
2.	Green lamp
3.	Yellow lamp
4.	Lamp push-button

Outputs for expansion board 1 (X-Brd 1)(B)

Output	Function
1.	Heat drying
2.	Fan drying
3.	Door closing CS
4.	Door opening CS

Outputs for expansion board 2 (X-Brd 2)(C)

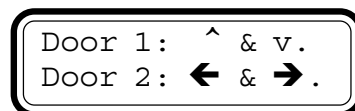
Output	Function
1.	Dispenser pump 3
2.	Vacant
3.	Vacant
4.	Vacant

Testing the door

See section Test to get to this position.



Press 



Close door on soiled side by pressing  and open by pressing .

Close door on clean side by pressing  and open by pressing .

N.B.

Restore the doors to the correct mode after testing (door SS open and door CS closed).

Error status

See section Test to get to this position.

Tst

Fault stat.

Press .

F-code: 01 001

Press  and  to choose the error that is to be checked. Each error status can be reset with .

Program status

See section Test to get to this position.

States how many times each program has been used.

Tst

Prog. stat.

Press .

Prog. 1: 7

Press  and  to choose which program is to be checked. Each program status can be reset with .

Machine status

See section Test to get to this position.

An example printout of the machine status is shown in Appendix 3.

Tst

Print stat.

Press .

Clock mode

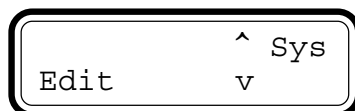
9900

13:43

Press  until Password is displayed (10 seconds).

Password: ****

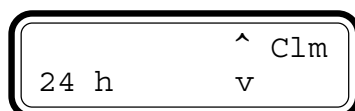
Type the authority code    .



Press and to find Clock mode.

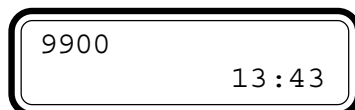


Press .

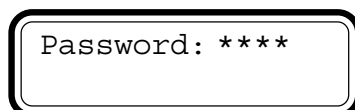


Choose the clock setting with and (12 or 24 hour clock) and press .

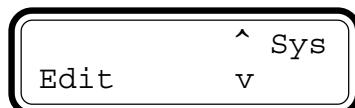
Set clock



Press until Password is displayed (10 seconds).



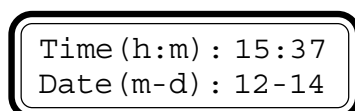
Type the authority code .



Press and to find Set clock.



Press .

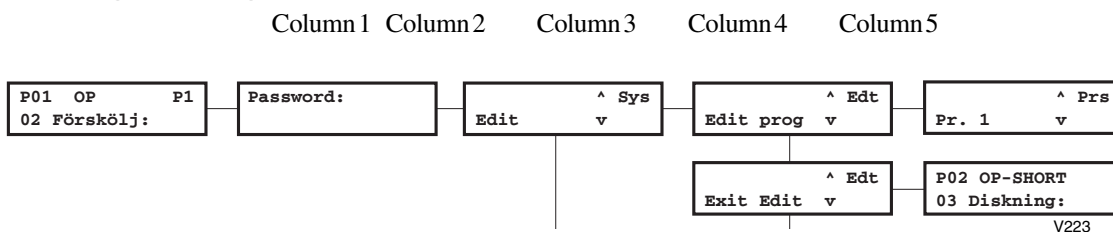


Set the correct time and date using and and press .

N.B.

Because the real-time clock does not support years, manual correction is required for summertime, wintertime and leap years.

Exiting a program mode



To exit Column 5 in the menu tree:

- End the programming.
- Press .
- Continue as follows.

To exit Column 4 in the menu tree:

- Press  or  to find Exit Edit or Exit test.
- Press .
- Continue as follows.

To exit Column 3 in the menu tree:

- Press  or  to find Exit Sys.
- Press .

Quick stepping of program

A program that is in progress can be stepped forward quickly through its phases by keeping  and  pressed in together and then press  once for each phase. The program can be stepped to the end or to the desired phase.

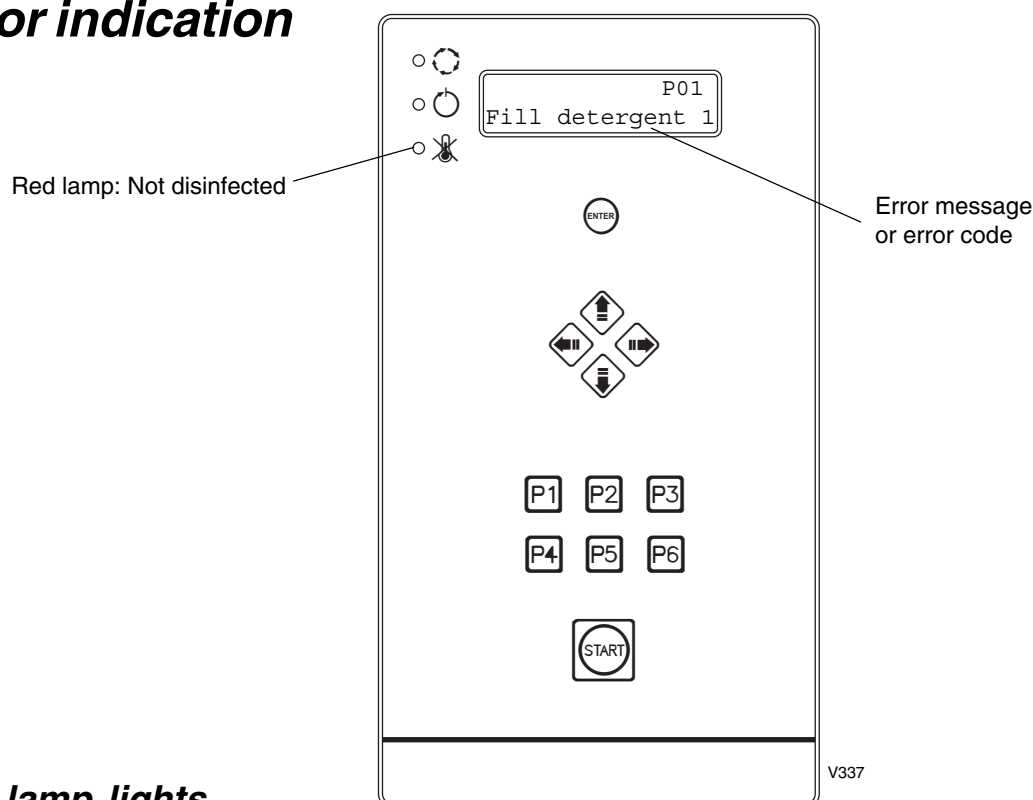


Never stop fast advance during a heating-up phase, as this can damage the machine.

Emptying the RAM of the machine

The RAM can be emptied of information if required (eg, when changing the EPROM). Turn off the power supply with the operating switch and press all the arrow keys when switching on again.

Error indication



Red lamp lights

If the red lamp lights at , this is an indication that disinfection is aborted because the temperature is too low. Contact maintenance personnel.

Error messages



Error messages are displayed in clear text. The machine cannot be started until the error is rectified. The following error messages can occur:

Choose program	 key has been pressed before choosing a program.
Not programmed	No program available for the program button  -  chosen.
Close the door	 key pressed while door is open(manual door).
Fill detergent 1	Detergent bottle 1 is empty and the  key has been pressed.
Fill detergent 2	Detergent bottle 2 is empty and the  key has been pressed.
Fill detergent 3	Detergent bottle 3 is empty and the  key has been pressed.

NOTE!

When the error message "Fill detergent" appears, there is always sufficient detergent left for one program.

Error codes (F-Codes)

Error code: 05

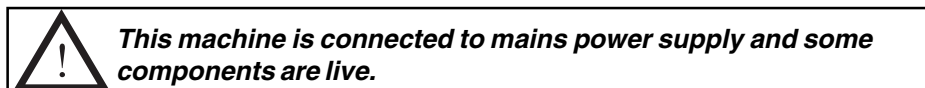
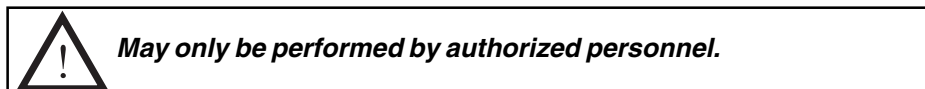
The error codes indicate a serious malfunction in the washing sequence. Such errors must be attended to by authorized personnel.

The following error codes can appear:

Code	Fault	Comments
1	Filling with water too slow	Water level sensor not activated within 10 minutes from commencement of filling.
2	Heating of water too slow	Water not heated 10°C from initial temperature within 8 minutes from commencement of heating.
3	Draining not working.	Water level sensor still activated at end of programmed draining period.
4	Drying air temperature too low.	Air temperature below 62°C after 15 minutes drying.
5	Faulty temperature sensor.	Displayed temperature below 0°C or above 110 °C.
7	Motor circuit breaker triggered.	Motor circuit breaker for the circulation pump is triggered.
8	Door malfunction, soiled side.	Sensor "Door closed" in lock not activated.
9	Door malfunction, clean side.	Sensor "Door closed" in lock not activated.
10	Error when filling economy tank.	Level sensor in tank not actuated within two minutes of starting to fill the economy tank.
11	Conductivity	Conductivity out of preset range

Acknowledgement of error code

After rectifying an error, press the  button for at least 5 seconds to reset the code.

Table of faults and possible action

Code	Fault	Possible remedy
1	Filling with water too slow	a. Check that shut-off valves are open and that water enters the machine. b. Check that solenoid valves open and that their filters are not clogged.
2	Heating of water too slow	a. Check if overheating protection is triggered. b. Check that all phases are live to the element. c. Check that element is not burnt out. d. Check that solenoid valves close. e. For steam heating: Inspect steam valve and condense water drain. Differential pressure between incoming and outgoing steam must be more than 2 bar.
3	Draining time too long	a. Check that drain pump is pumping out water. b. Check that pressure switch changes position. c. Check that solenoid valves close fully, ie, no leakage.
4	Drying air temperature too low.	a. Check that overheating protection has not triggered. b. Check that all phases are live to the element. c. Check that thermostat is correctly set (correct setting 110½°C).
5	Faulty temperature sensor.	a. Check to see if PT-1000 sensor is out of action (if it is it must be replaced).
7	Motor circuit breaker triggered.	a. Check that all phases are live to the circulation pump. b. Check that motor circuit breaker is correctly set. c. Check that the pump wheel rotates freely. d. Check that direction of rotation is correct.
8	Malfunctioning door, soiled side.	a. Check if microswitch for limit "locked door" is actuated within 10 s on closing the door, and if microswitch for limit "open door" is actuated within 10 s on opening the door.
9	Malfunctioning door, clean side.	a. Check if microswitch for limit "locked door" is actuated within 10 s on closing the door, and if microswitch for limit "open door" is actuated within 10 s on opening the door.
10	Error when filling economy tank	a. Inspect pump and level sensor
11	Conductivity	a. Check the water inlet b. Add a rinse phase

Repairs and adjustment

Replacing the temperature sensor



May only be performed by authorized personnel.



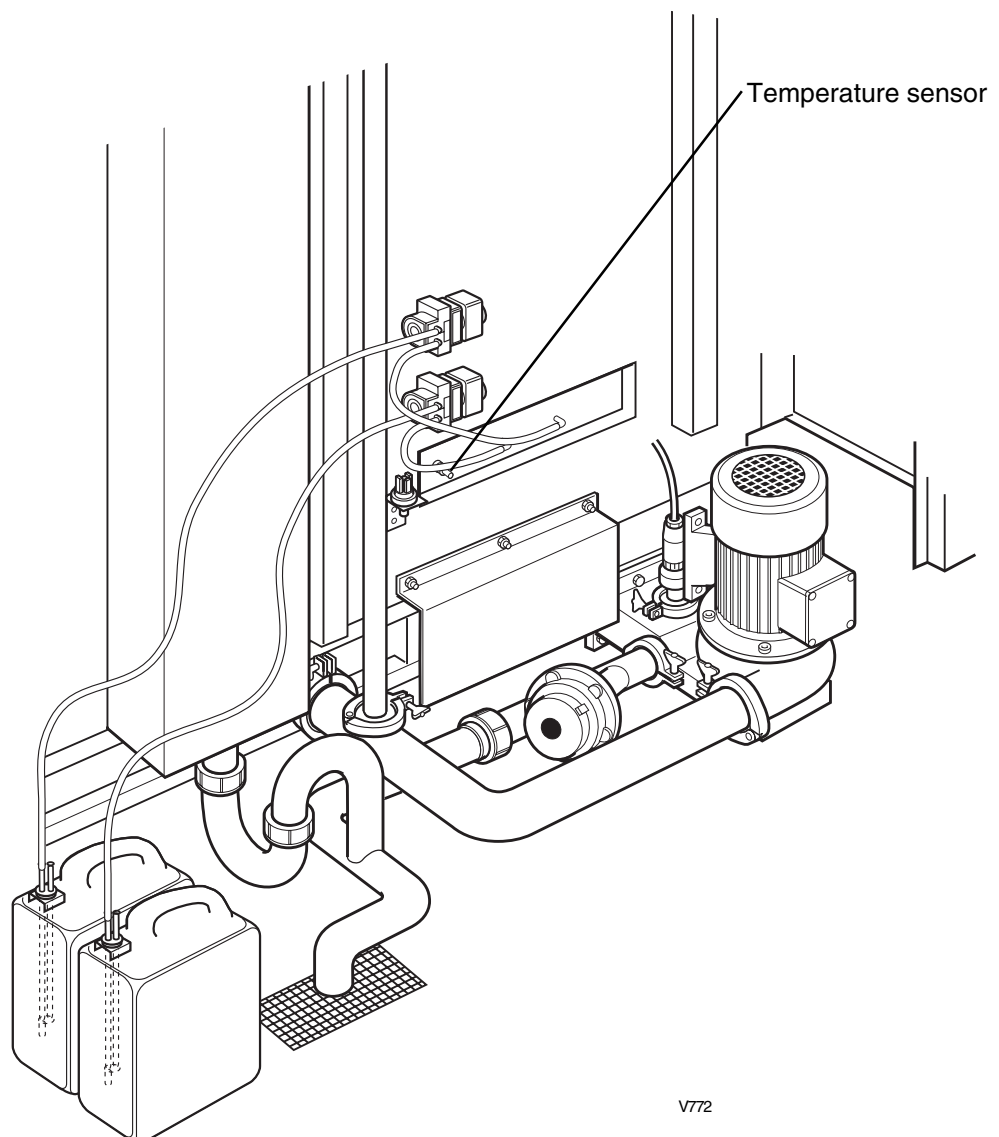
This machine is connected to mains power supply and some components are live.

- Take out the old temperature sensor by pulling it out through the seal.
- Push the new sensor through the seal. The temperature sensor shall protrude 22 mm into the machine.



Note.

It is important that the temperature sensor does not protrude too far into the washing chamber, it may otherwise be damaged when the machine is in operation.



V772

0103

Replacing an EPROM



May only be performed by authorized personnel.

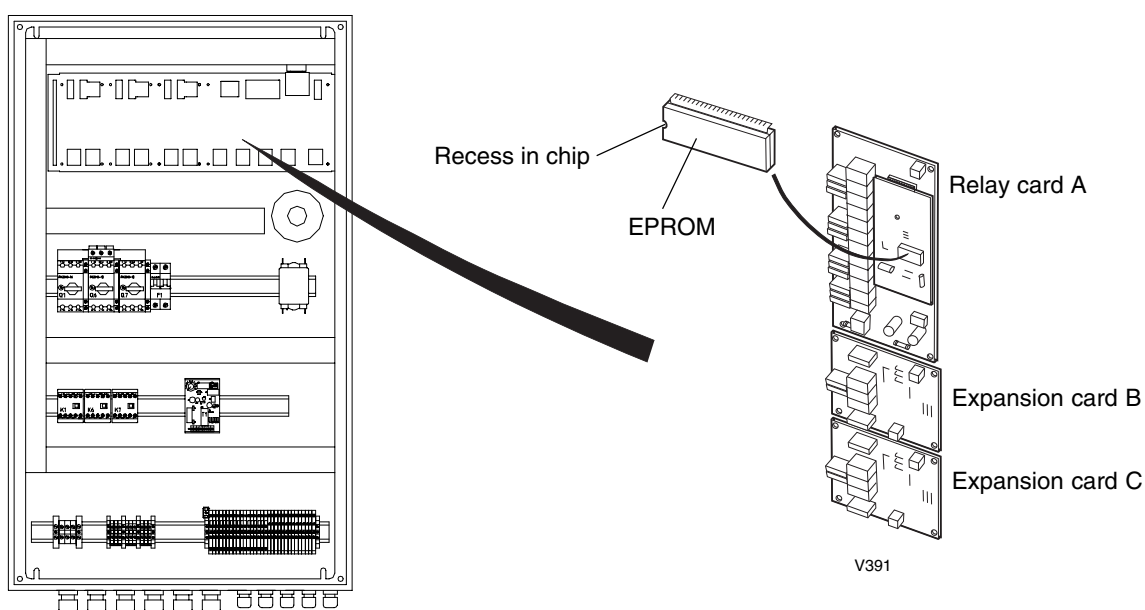


Ensure that the power supply is disconnected before starting work on the machine.

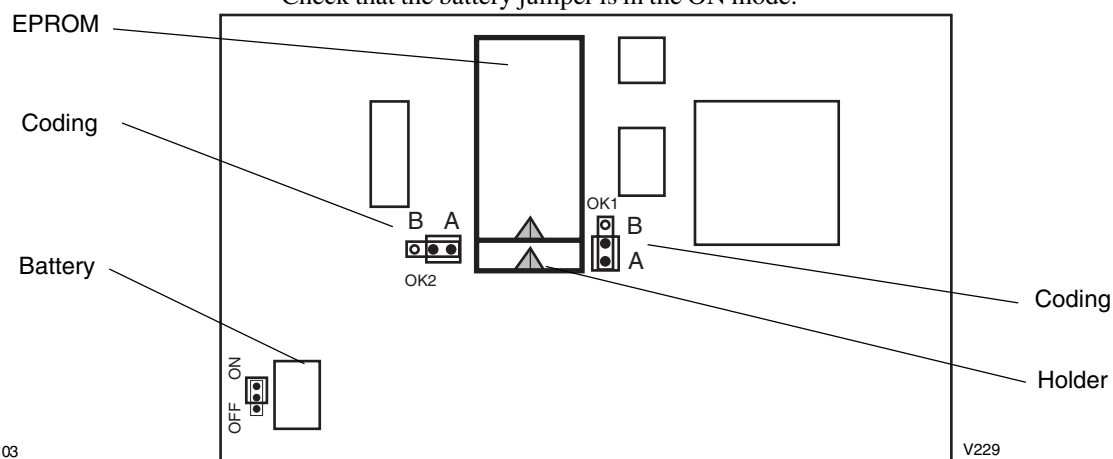


Make sure that a temporary EPA is created e.g. by using a discharge underlayer and earthed wrist-bands before commencing work.

- Turn off the switch.
- Open the Electric box door and loosen the plate that holds the circuit c



- Remove the EPROM using a PROM-chip tool (Check that the battery jumper is in the OFF mode).
- Insert the new EPROM using the PROM-chip tool, positioning it so that the recess on the short side coincides with the corresponding lug on the holder. The EPROM is to be fitted at the upper edge of the holder.
- Coding A - B is to be as illustrated below.
- Check that the battery jumper is in the ON mode.



0103

V229

Setting timer (drying module, start fan two)

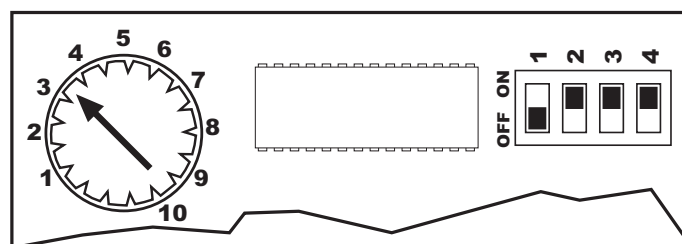
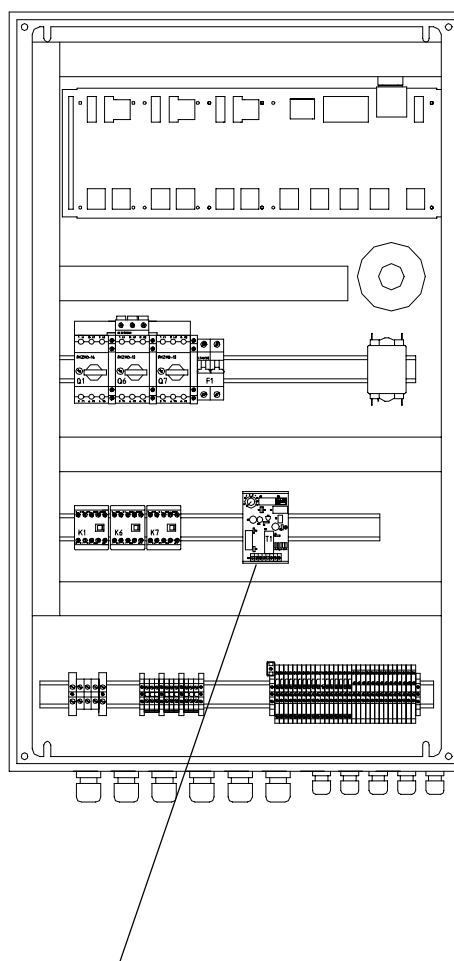
May only be done by authorized personnel.



Ensure that the machine is dead before starting any work.

Ensure that settings of the timer are as indicated by the illustration below.

Electric box



Adjustement of door and door switch



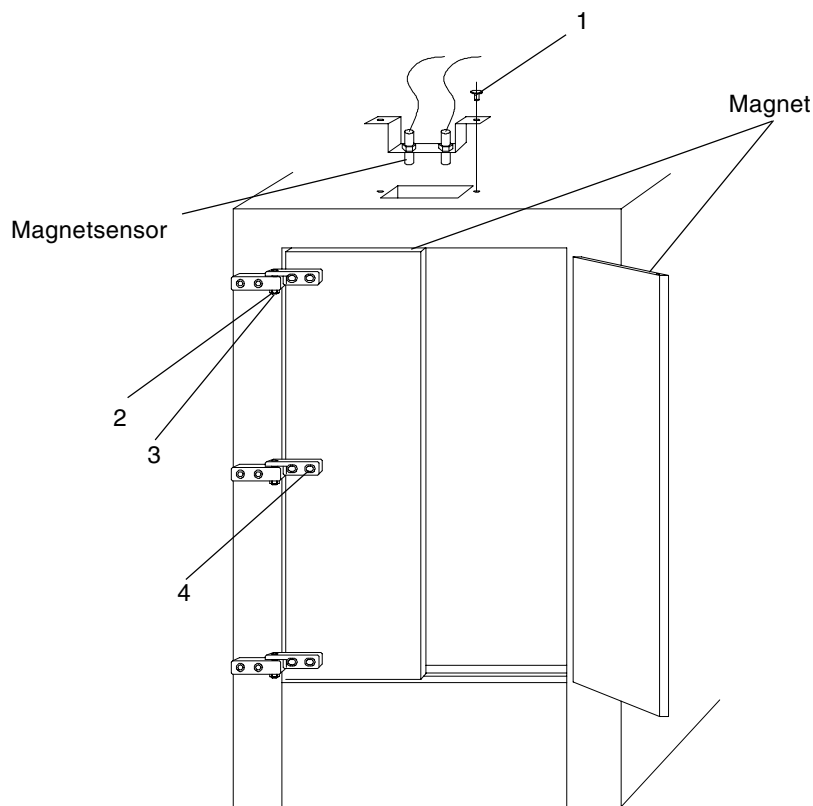
May only be done by authorized personnel.



Ensure that the machine is dead before starting any work.

Changing the magnetic sensors

Losen the screws (1) and lift the clamp that holds the magnetic sensors. When you change the sensors it's important that they are screwed as long as possible so that they have contact with the magnet of the door.



Adjustment of the door

Vertically: Losen the nuts(2) on all three hinges. Adjust the door up- or downwards with the adjustment screws. The doors must only touch the bottom gasket slightly. Be sure to lock the nuts after adjustment.

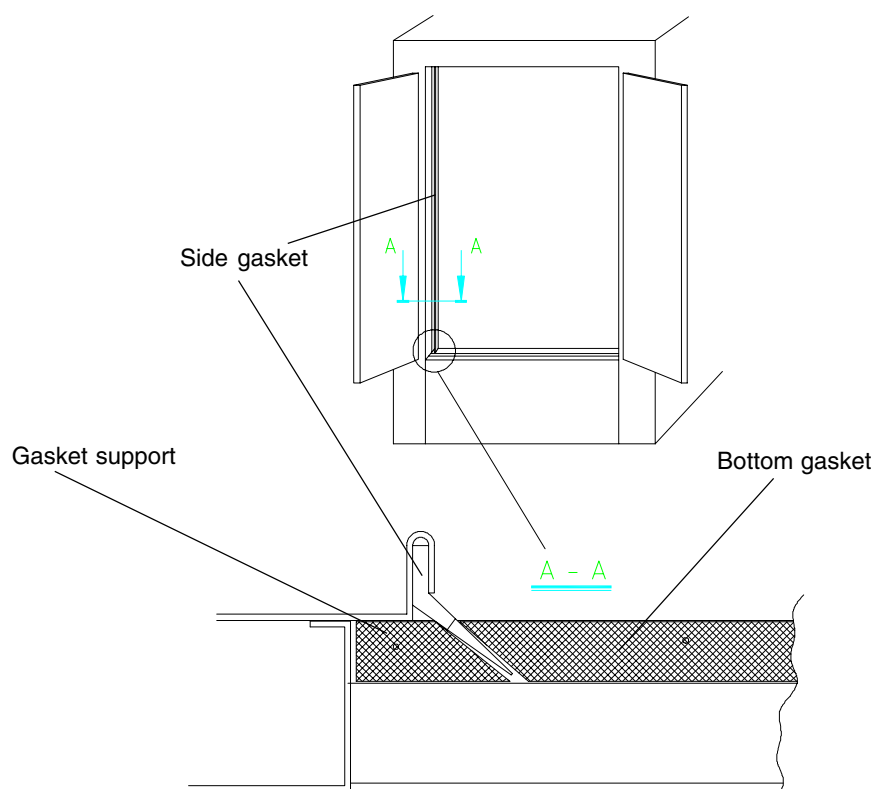
Laterally: Losen the socket head screws (4). Move the door laterally to the right position and lock the screws. The gap between the doors may not be to large, to avoid leakage .

Changing the door gasket



May only be done by authorized personnel.

When you are changing the gaskets, the side gaskets must partly be put between the bottom gasket and the gasket support (see picture). Note that side gasket and gasket support are available in right- and left model.



Overheating protection



May only be performed by authorized personnel.



This machine is connected to mains power supply and some components are live.

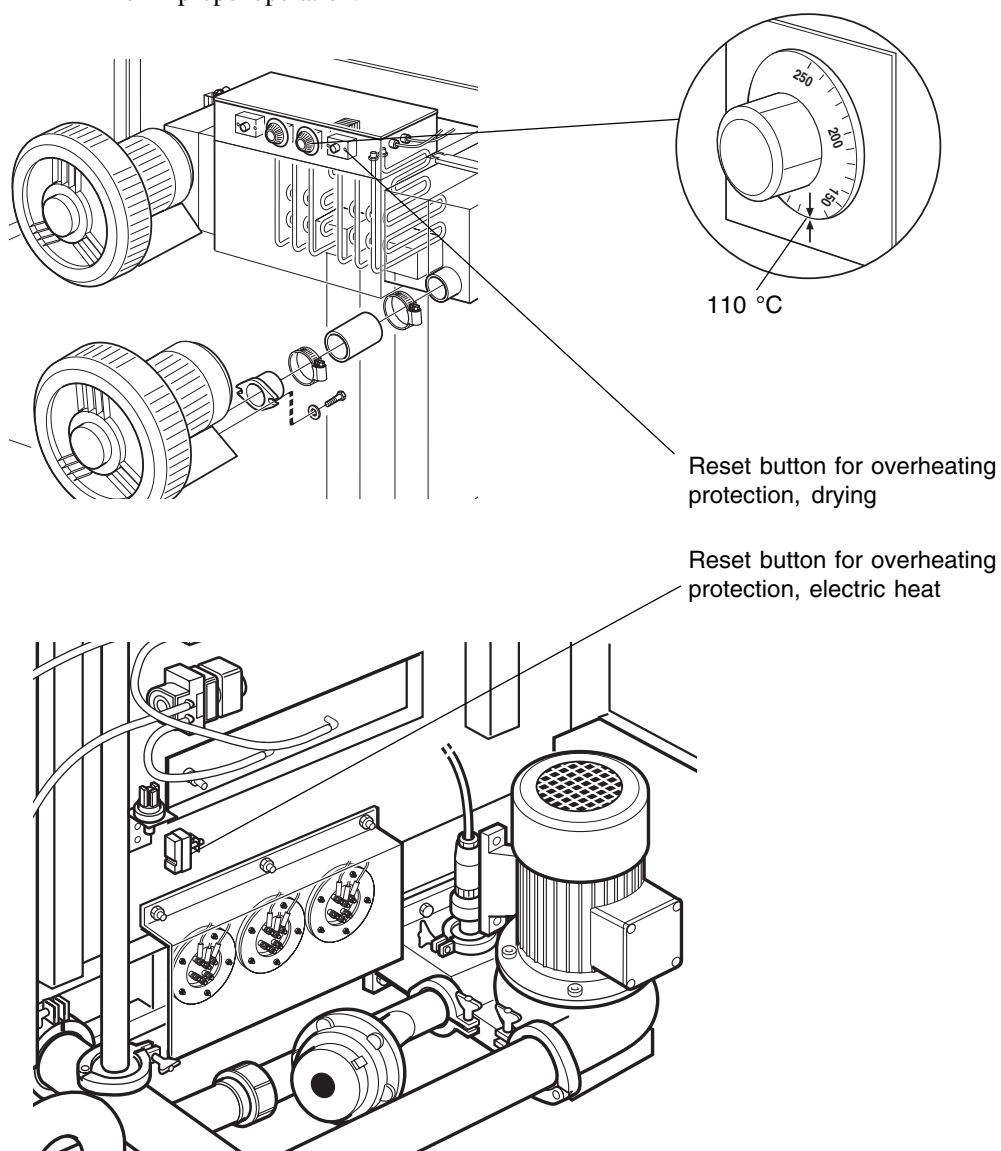
The heating element is provided with an overheating protection device which will be triggered if the temperature becomes too high.

Press the reset button on the overheating device if it is triggered.

Note.

Check why the overheating protection is triggered before resetting it.

The protection device can be triggered by a malfunctioning temperature sensor or improper operation.



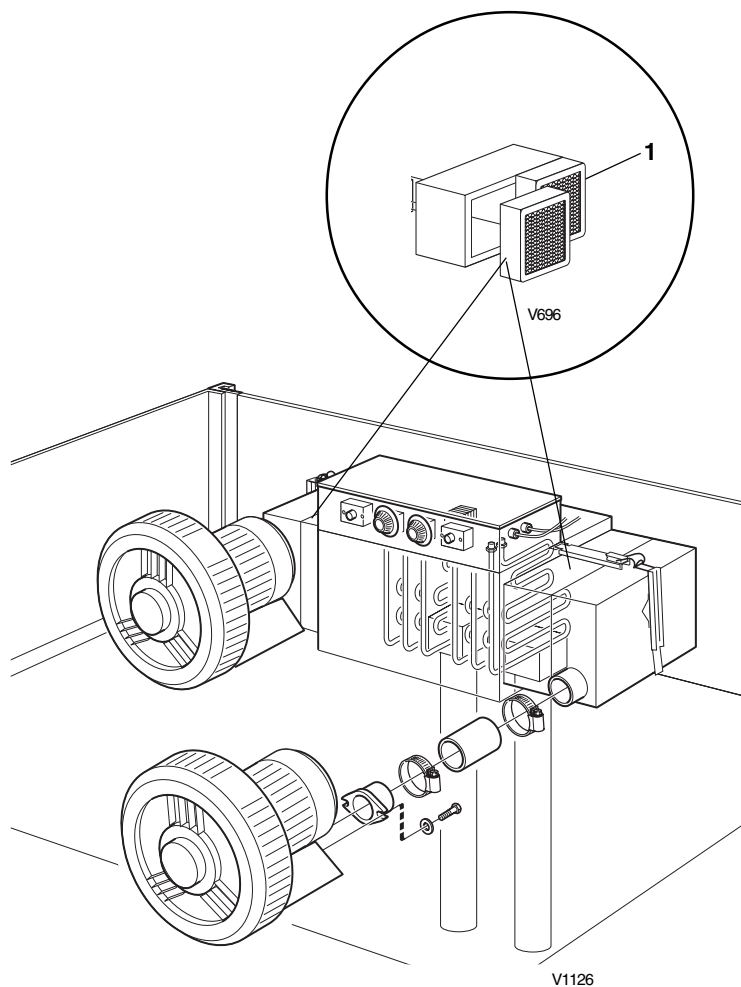
Dryer



May only be performed by authorized personnel.



This machine is connected to mains power supply and some components are live.



- Check once a year that hoses and seals are tight.
- Change sterile filter 1 (two filters) once a year or after 400 hours operating time. If the air is very "dirty" change more often.

Setting the amount of detergent and rinse-aid



May only be performed by authorized personnel.



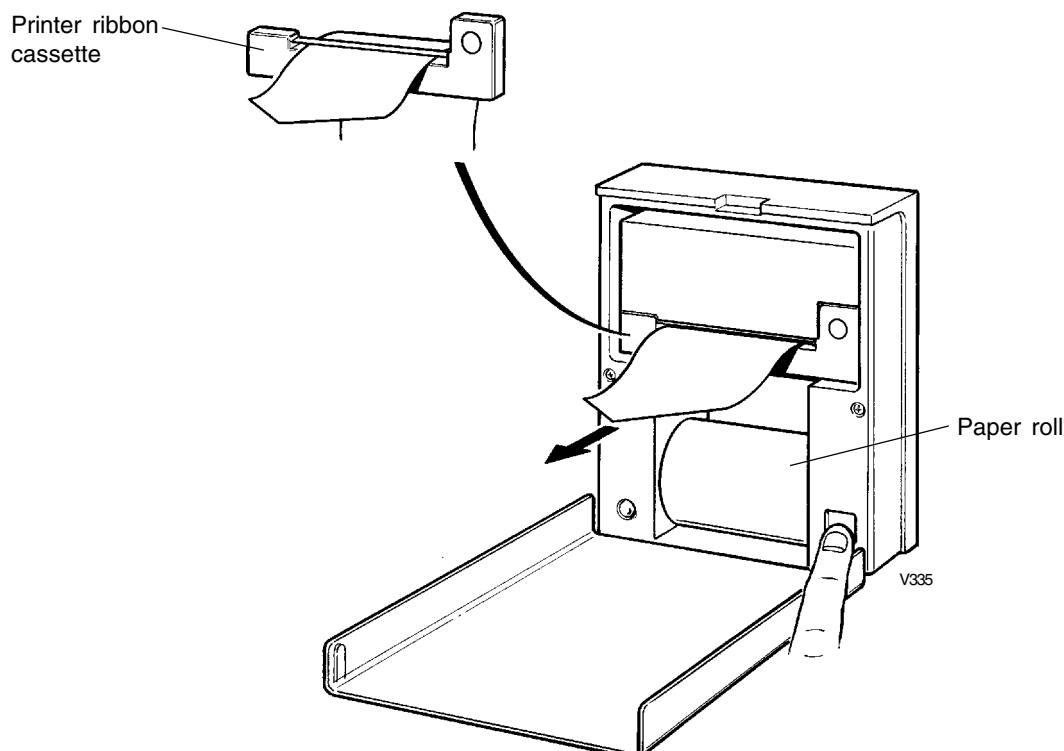
This machine is connected to mains power supply and some components are live.

- Measure 100 ml of the detergent or water softener in a measuring glass. Ensure that the suction tube and pump are fully primed with the agent before testing.
- Insert the suction tube in the measuring glass and measure the actual consumption for a complete cleaning program. Adjust the setting as required and repeat the test until the amount is correct in compliance with the manufacturer's instructions.

Printer

Changing the paper roll

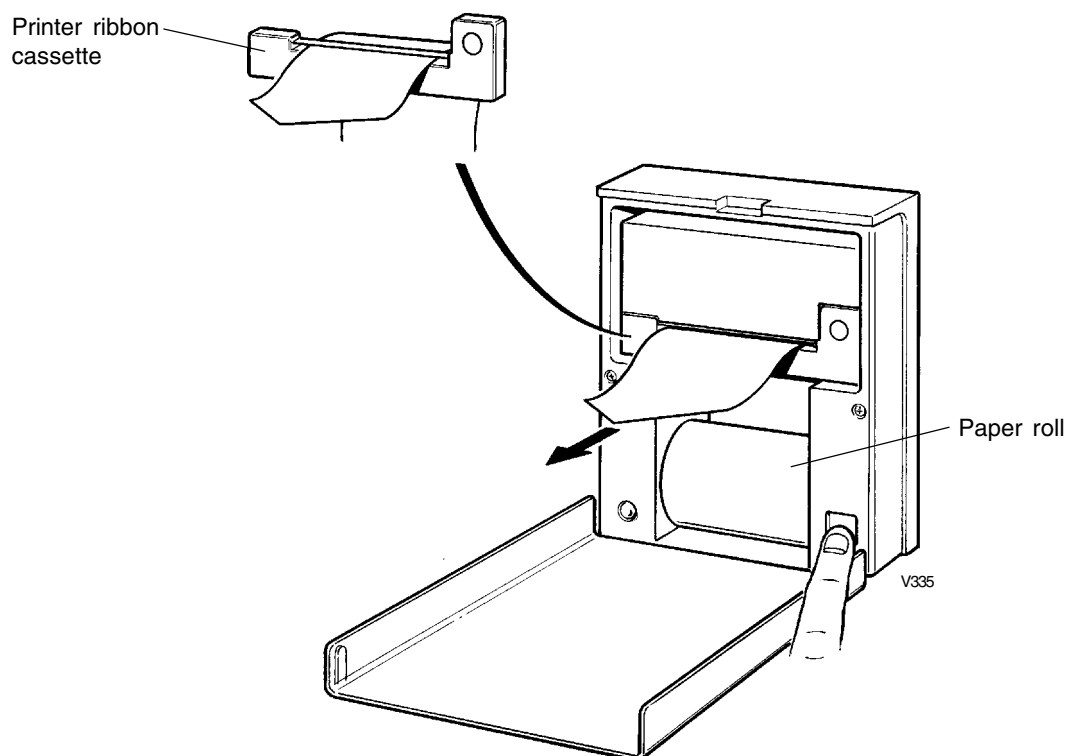
- Open the front cover.
- Remove the remains of any paper.
- Push lightly on the left side of the printer ribbon cassette to remove the cassette.
- Cut the end of a new roll of paper at an angle as illustrated below. This will facilitate insertion of the paper through the mechanism.
- Insert the end of the paper roll and press the green button on the printer. The paper will be fed forward through the opening by the small friction-wheel.
- Re-insert the printer ribbon cassette. The printer is now ready for use.



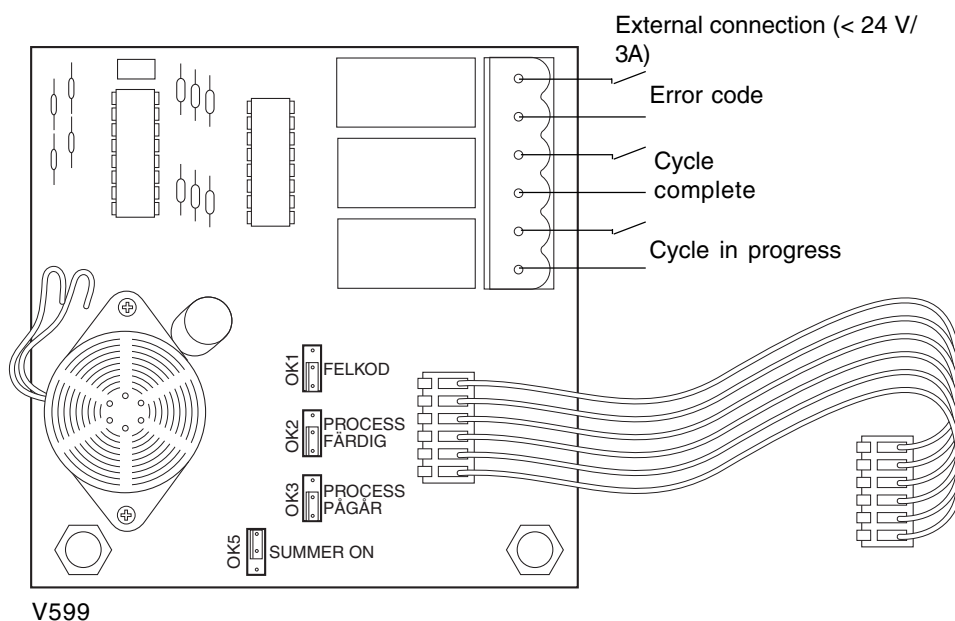
0103

Changing the ribbon cassette

- Open the front cover.
- Push lightly on the left side of the printer ribbon cassette to remove the cassette.
- Insert the new printer ribbon cassette. The printer is now ready for use.



Function and support for summer card 4994274-00



Summer on

For use when an audio signal from the summer card is to be used or not. Note that the machine configuration must be changed so that summer is ON.

- OK5 ☒ ON Audio signal.
- OK5 ☐ OFF No audio signal.

In addition to normal display function, external functions can be enable via Relays 1 and 2.

Error code

Used to give warning when a fault has arisen.

- OK1 ☒ ON If a fault develops and if summer is ON, an audio signal is activated. An external audio and/or visual signal can be connected via A2 to RE1
- OK1 ☐ OFF No function.

Cycle complete

Used to give warning that the cycle has finished.

- OK2 ☒ ON When a cycle is complete and summer is ON, an audio signal is activated. En external audio and/or visual signal can be connected via A2 to RE2
- OK2 ☐ OFF No function

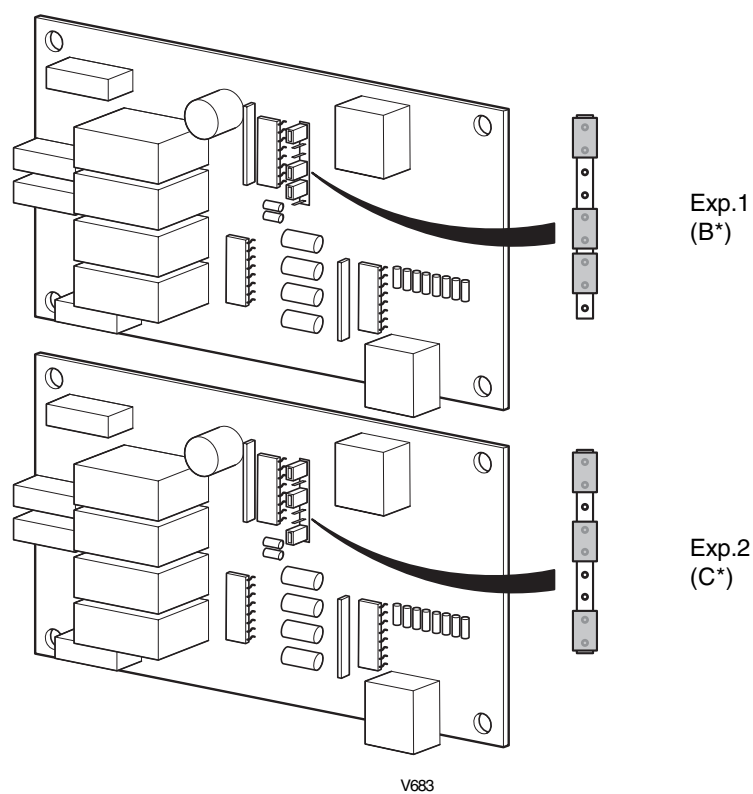
Cycle in progress

Used to give warning that a cycle is in progress.

- OK3 ☒ ON An external audio and/or visual signal can be connected via A2 to RE3.
- OK3 ☐ OFF No function.

Jumping of expansion card

Jumping of the expansion card is performed so that the processor can tell one card from another. Jumping may be required when a card is replaced or when supplementary equipment is fitted. Jumping is carried out as shown in the illustration.



* Designation according to electric circuit diagram

Replacement of hose for hose pump

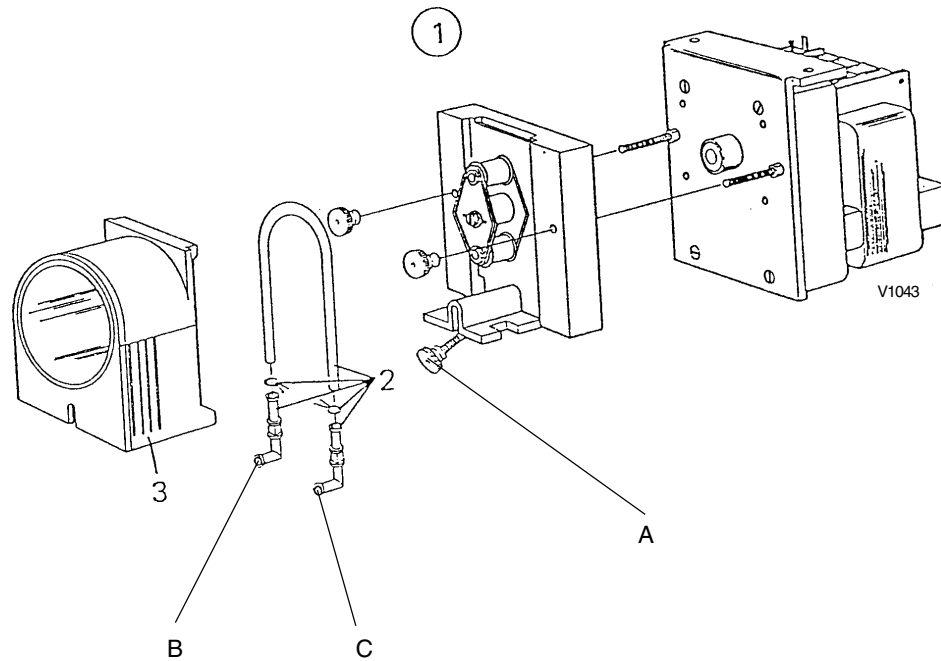


May only be performed by authorized personnel.



Ensure that the power supply is disconnected before starting work on the machine.

- Remove the cover (3) by releasing screw A.
- Disconnect the hoses at connections B and C.
- Remove the entire unit, including hose (2). (One complete spare parts kit).
- Fit the new unit.
- Refit the cover.



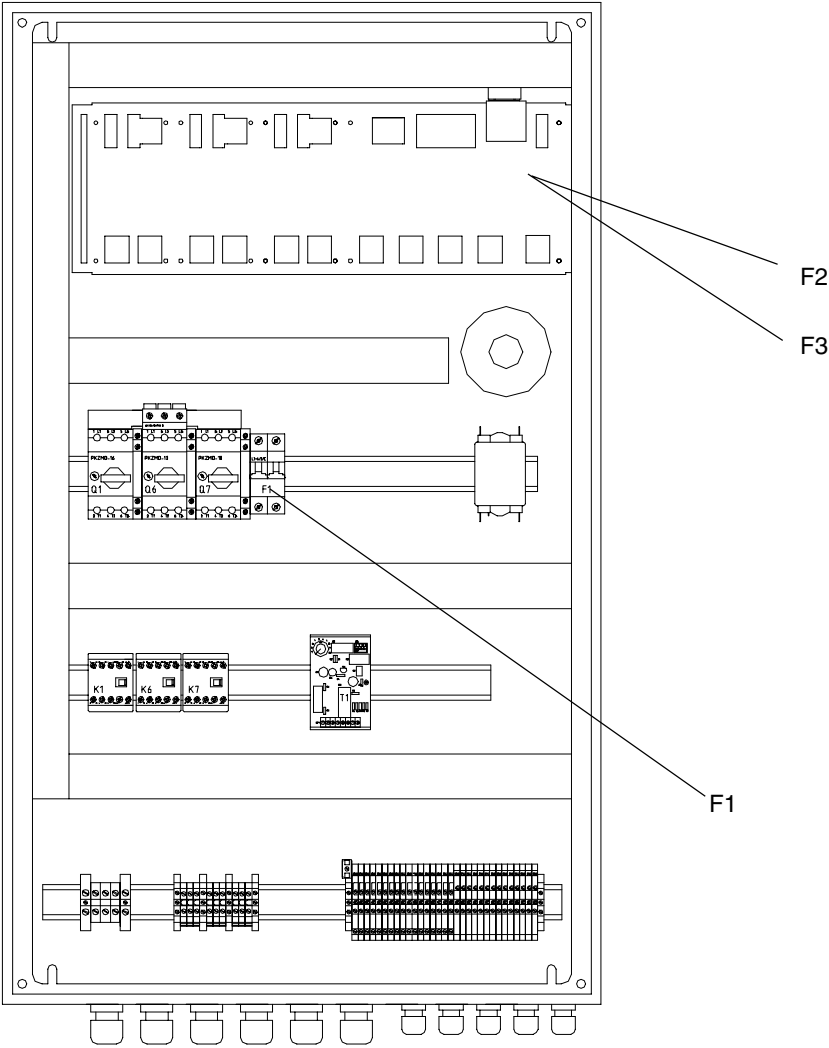
Fuse replacement



May only be performed by authorized personnel.



Ensure that the power supply is disconnected before starting work on the machine.



F1	Fuse for control voltage	<230 V 400V	6 A 2-pol 6 A 1-pol
F2	Fuse for electronics		315mA T
F3	Fuse for electronics		200mA T

Programs

P1. WASH-RINSE-DISINFECTION

Draining	30 sec	
Washing 60 C	2 min	Cw Hw(dos 1-200 ml, 45 C)
Draining	3 min	
Rinse	1 min	Hw
Draining	3 min	
Final rinse 90 C	1 min	Hw (dos 2 -25 ml, 85 C)
Drying	10min	(draining 4 min)

P2. WASH- DISINFECTION

Draining	30 sec	
Washing 60 C	2 min	Cw Hw(dos 1-200 ml, 45 C)
Draining	3 min	
Final rinse 90 C	1 min	Hw (dos 2 -25 ml, 85 C)
Drying	10min	(draining 4 min)

P3. DISINFECTION.

Final rinse 90 C	1 min	Hw(dos 2 -25 ml, 85 C)
Drying	2min	(draining 0 min)

P4. DRAINING

Draining	3,5 min
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This product is manufactured by:

GETINGE DISINFECTION AB, Ljungadalsgatan 11, Box 1505, 351 15 Växjö, Sweden

